

ABSTRACT OF THE DISCLOSURE

A process of metal interconnects and a structure of metal interconnect produced therefrom are provided. An opening is formed in a dielectric layer. A metal layer is formed over the dielectric layer filling the opening. A film layer is formed on the metal layer and the dielectric layer. The film layer is reacted with the metal layer
5 during a thermal process, and a protective layer is formed on the surface of the metal layer. The portion of the film layer not reacted with the metal layer is removed to avoid short between the metal layers. The protective layer can protect the surface of the metal layer from being oxidized and thus the stability and the reliability of the semiconductor device can be effectively promoted.